

Report by  
the Committee Appointed to Study  
Classification, Transportation, Distribution  
Storage and Sales of Pesticides in Ontario

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THE HONOURABLE GEORGE A. KERR, Q.C.  
MINISTER OF THE  
ONTARIO DEPARTMENT OF THE ENVIRONMENT

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Dear Mr. Kerr:

I submit herewith the Report of the Committee  
Appointed to Study Classification, Transportation,  
Distribution, Storage and Sales of Pesticides in  
Ontario.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Keith Laver". The signature is fluid and cursive, written over the printed name.

*Keith G. Laver,*

CHAIRMAN, COMMITTEE APPOINTED TO  
STUDY CLASSIFICATION, TRANSPORTATION,  
DISTRIBUTION, STORAGE AND SALE OF  
PESTICIDES IN ONTARIO

AP-20

## PREFACE

In October, 1970, the Honourable A. B. R. Lawrence, Minister of Health, appointed a task group to study and report on the current situation regarding the Classification, Transportation, Distribution, Storage and Sale of Pesticides in Ontario. The membership of this task group was made up of specialists from associated trade industries, universities, the chemical industry and various provincial and federal government agencies under the chairmanship of Mr. K. G. Laver.

At the time of completion of the report, responsibility for pesticide administration was transferred from the Department of Health to the Department of the Environment.

The report contained herein is being distributed to interested individuals and organizations for the purpose of inviting comments and suggestions, before it will be considered for updating the Pesticides Act.

Please forward any comments pertaining to this report not later than April 15th, 1972 to:

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Distribution, Storage and Sale of Pesticides  
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## INTRODUCTION

During 1970, the Environmental Health Services Branch of the Ontario Department of Health became increasingly concerned about the position of pesticides in relation to human health and environmental effects.

Some world health, forestry and agricultural experts maintain that the tremendous benefits to mankind through the control of human disease and increased food and fibre production require the continued use of pesticides on a scale related to the continuing rise in world and local populations.

Others paint a more controversial picture, citing stress signals displayed by fish and wildlife as a warning that further interference with or destruction of any part of the natural environment will ultimately reflect seriously on human health.

Alternative control methods at this time cannot provide sufficient food for man or control his insect pests. Therefore it may be assumed that chemical pest control will be continued in the foreseeable future.

It is a fact that past applications of pesticides have interfered with the environment, and likely will continue to do so if not carefully administered in the future. It is imperative therefore to develop adequate controls, based on cost benefit assessment.

The aim of this study was to create a picture of pesticides and their relationship to human welfare. The enclosed Classification of Pesticides (see Table 1) creates this picture.

This autumn United States government officials decided to develop a pesticide classification project. They have allocated four years research time and ten million dollars for this purpose.

Over 90% of the time and cost of our project was borne by the chemical industry and universities. We acknowledge that there will be discrepancies in our classification, because we lack the infinite knowledge required to scientifically assess and evaluate all of the risks in tampering with our biosphere. We hope that future regulations will be sufficiently flexible to allow updating the system on a continuing basis as further information is developed and becomes available.

Whether or not the provincial or any other government enacts all of the proposed legislation in every detail is not important. The prime concern is that responsible legislators accept the principle of using classification as the basis for legislation and enact regulations with regard to this, rather than in a haphazard fashion in response to emergency demands.

## GENERAL RECOMMENDATIONS OF THE TASK GROUP

The Task Group recommends that:

- 1) all basic pesticides be legally classified into four categories: 'A' (Restricted); 'B' (Commercial); 'C' (Home and Garden); and 'D' (Unrestricted), following the criteria outlined below.
- 2) vendors of pesticides become subject to regulations limiting the storage, transportation and sale of pesticides as outlined in this report.
- 3) the Department of the Environment set into motion the additional research necessary to implement the above legislation in Recommendation 2 by requesting the Ontario Pesticides Advisory Committee to classify approximately 4,500 mixtures of pesticides on the Ontario market using the classification of basic compounds referred to in the above first Recommendation.

## GUIDELINES FOR CLASSIFICATION

Pesticides classified under this scheme are all registered pesticides under the Pest Control Products Act by the Canada Department of Agriculture (C.D.A.) and are identifiable by both a code in the Registered Products list and a number designating the actual product offered for sale by trade name. This classification takes into consideration the marketable formulation when considering LD<sub>50</sub>\* values, but the active ingredient when considering persistence of parent compounds or their metabolites.

### Category A

Pesticides and/or pesticide formulations in this group would be limited to licensed exterminators and/or applicators under a specific use permit. Sales of Category A compounds would be restricted to licensed vendors who would keep a record of all sales. The criteria for defining this group included:

- 1) pesticides that pose a serious hazard to public health and/or the natural environment
- 2) pesticides exhibiting high acute oral and dermal toxicities, i.e. LD<sub>50</sub> values less than 50 mg/kg
- 3) pesticides with fumigant action that possess low threshold values at normal temperatures
- 4) pesticides that are persistent and/or give rise to persistent metabolites that produce undesirable side effects on non-target organisms either by acute or chronic toxicity.

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\*LD<sub>50</sub> – a dose or amount of pesticide which, when given by mouth or left in contact with bare skin, will produce death in 50% of test animals. The dose is expressed in milligrams of pesticide per kilogram of test animal body weight (mg/kg).

### **Category B**

Pesticides and/or pesticide formulations in this group would be restricted to licensed exterminators and registered applicators (including farmers or foresters). Sale of Category B compounds would be through a licensed vendor who would keep a record of sales. These pesticides would be available for the commercial agricultural, forestry and structural pest control industries. The criteria for defining this group included:

- 1) pesticides that could pose a hazard if available to the homeowner but are considered suitable for use by the experienced commercial applicator
- 2) pesticides exhibiting medium acute oral and dermal toxicities, i.e.  $LD_{50}$  values between 50 and 500 mg/kg
- 3) pesticides with fumigant action that possess moderate threshold values at normal temperatures
- 4) organic pesticides that do not present problems of long term persistence or accumulation in biological tissues, and those inorganic pesticides that do not present a hazard to the environment.

### **Category C**

Pesticides and/or pesticide formulations in this group are to be available to the homeowner, as the hazards accompanying their use are considered minimal. Sales of Category C would be through a licensed vendor. The criteria for defining this group included:

- 1) pesticide formulations in this category should not pose a problem when containers are disposed of in sanitary landfill sites
- 2) neither pesticide nor dispersant should pose a risk to the environment or to public health
- 3) those pesticide formulations exhibiting low acute oral and dermal toxicities, i.e.  $LD_{50}$  values between 500 and 5,000 mg/kg
- 4) those pesticide formulations that have low inhalation toxicity at normal temperatures
- 5) those organic pesticides that are short-lived and do not produce either persistent or toxic metabolites
- 6) those inorganic pesticides that do not present an environmental hazard.

### **Category D**

Pesticides and/or pesticide formulations that can safely be handled by any type of outlet and would be available for sale in food handling establishments. The criteria for defining this group included:

- 1) pesticide formulations exhibiting very low acute oral and dermal toxicity, i.e.  $LD_{50}$  values greater than 5000 mg/kg
- 2) pesticide formulations that can be considered relatively innocuous to humans. This includes compounds that are currently available for non-pesticide uses,



- or are used as insect or animal repellents, or are pesticides formulated in very low concentration or packed in special containers to render them virtually innocuous, and which can be safely used indoors.
- 3) those pesticides that are of no measurable hazard to the environment or to domestic pets.

## PROCEDURE

The sub-committees organized to undertake this study involved both government and trade specialists.

### Classification Sub-Committee

Dr. Gray chaired a sub-committee responsible for classifying all basic materials. Representatives of the Food and Drug Directorate of Canada and of the Canada Department of Agriculture sat with this sub-committee.

It was further broken down into three working groups. One, chaired by Dr. G. S. Cooper, classified all insecticides, acaricides, rodenticides, fish toxicants, bird toxicants and molluscicides. Another, chaired by Dr. R. Frank, classified fungicides. The third, chaired by Dr. G. R. Stephenson, classified herbicides.

As the meetings of the Classification Sub-Committee progressed, the representatives of the Canada Department of Agriculture agreed in principle to accept the parameters relating to toxicity and other factors for their Act, and at an appropriate time in the future would federally register pesticides into three categories:

- our Category 'A' as their 'restricted'
- our Category 'B' as their 'commercial'
- our Category 'C' as their 'home and garden'

It was further agreed that on implementation of these recommendations it would be ideal if a federal-provincial working committee would continuously classify pesticides as a prerequisite to federal registration.

It was also considered by this group that provincial regulations might in future be based on federal classification, provided adequate provincial expertise is included in this proposed committee.

This could in large part answer trade allegations that the provinces, by their varied Pesticides Acts, hinder trade unreasonably.

### Storage, Sales and Transportation Sub-Committee

This sub-committee, chaired by Mr. Lloyd Miller, Director of Agricultural Products, Shell Canada, researched and made recommendations regarding storage, sale, and transportation of pesticides. This group started their research by sending out to the trade a detailed questionnaire to ascertain the problems.

The sub-committee was broken down into two working groups. One, chaired by Mr. T. L. Ross, Executive Secretary of the Canadian Retail Hardware Association, made recommendations regarding sales. The other, chaired by Mr. J. Rainforth, Ontario Department of Agriculture and Food, researched storage and transportation.

Mr. J. Rainforth, assisted by Dr. R. Frank, headed another team to ascertain problems and hazards to people involved in the storage of pesticides. Air samples and swabs were collected at four sales outlets in the Niagara Peninsula in the spring, at a time of active pesticides sales.

These samples were tested for Guthion, Imidan, Chlordane, Thiodan, Malathion, Ethion, Phosdrin, Parathion, Forestan, and P.C.B.s. Report No. 174 is included in this submission to indicate analysis of air samples. Report No. 203 is included to indicate those of swabs. (See appendix)

A third study group on industrial health in relation to the manufacturing of pesticides met under Mr. Miller's chairmanship.

Conclusions that the Committee feels result from this study are:

- 1) No specific hazard to employees of retail and trade outlets exists in the four sales outlets mentioned above.
- 2) Some residues were found on containers to be used for food products.

A further study by Mr. J. Rainforth and Dr. E. Mastromatteo, Department of Health, was carried out at dealer meetings to ascertain response to suggestions for vendor licensing, etc. The conclusions from questionnaires at these meetings indicate that pesticide dealers' premises should be licensed.

Also included in the appendix is the summary of a trade questionnaire sent out by Mr. Miller's Sub-Committee on Transportation, Storage and Sales. It was useful by pointing out weak spots and problem areas in sales outlets.

Preservatives for wood, etc. sold normally at lumber supply and hardware dealers outlets fall within our Category C or Home and Garden classification. Special exemption, provided packaging meets certain requirements, might be made in these cases to allow sale from non-licensed premises.

The sub-committee also indicates the need for research in certain areas, such as the problem of urban bulk storage and disposal of pesticides in the A and B Categories which are not fully covered here. The Pesticides Advisory Committee is undertaking studies in both areas and will report on them at a later date. These reports will augment this submission.

The sub-committee did not carry out an in-depth study on transportation of pesticides. Licensed carriers provide the greatest hazard, and further work to make transportation safer is needed. The Canadian Agricultural Chemicals Association has agreed to provide data to the Pesticides Advisory Committee in an effort to correct breakage and similar problems.

The individual reports of all these various groups have been received and studied. This report is the compilation of the reports applied to the basic concept that legislation surround classification of pesticides.

## RECOMMENDATIONS FOR LICENSING PESTICIDE MANUFACTURERS, FORMULATORS, AND VENDORS

### Mechanism of Control

Control over the distribution and sale of all but the least toxic and least potentially hazardous pesticides should reside in licences issued to firms and individuals involved in this activity by the Ontario Department of the Environment. The licences in the various categories as outlined hereafter should require that a minimum standard in procedures and methods of handling and/or selling pesticides be maintained.

While a nominal fee may be necessary for a licence, it should not be used as a deterrent to the continued wide availability of pesticides. Therefore, we have outlined what we consider to be a maximum fee in each category of licence.

The committee studied two possible means of ensuring the safe handling and sales of pesticides: the licensing of individuals, and the licensing of premises. It was concluded that the latter would provide more control in this area of operation for the following reasons:

- 1) It would be impossible for the department to conduct a program which would result in other than superficially trained people, unless such a program were to be of sufficient duration to make it meaningful and updated annually because of new pesticides, revised use patterns and new technology.
- 2) All pesticides registered under the Pest Control Products Act (Canada) require that risks and hazards associated with the use of such products be clearly defined on each product label.
- 3) All of the more hazardous pesticides used in the province (Categories A and B) will be available for use only by licensed exterminators and agriculturalists\* who are conversant with associated risks and potential hazards.
- 4) The Ontario Department of Agriculture and Food has, for many years, conducted educational seminars throughout the province on the safe selection and use of recommended pesticides for each crop. These courses are being continued and intensified.
- 5) Category C (Home and Garden) and Category D (Unrestricted) pesticides present relatively little risk to human health or the environment.

### Categories of Licences

Licences issued by the Department of the Environment should recognize the type

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\* *The Ontario Department of Agriculture and Food, the Federation of Agriculture and the Ontario Fruit & Vegetable Growers Association have accepted responsibility for working out*

- 1) *the designation of 'agriculturalist' under the terms of these proposed regulations*
- 2) *the machinery that would be necessary to accredit agriculturalists to obtain restricted and commercially classified pesticides.*

of function performed by the licensee as well as the degree of potential hazard associated with the class of pesticides handled and/or sold. The committee suggests one licence for pesticide formulators and distributors for resale, and three levels of licence for vendors depending upon the degree of hazard of products offered for sale to the end user.

**BULK LICENCE**—Maximum yearly fee \$100.00.

All formulators, distributors, and their agents of Category A and/or Category B and/or Category C pesticides.

This licence will not allow sale to the end user.

**VENDOR LICENCE I** — Maximum yearly fee \$20.00.

Each establishment making sales to the end user of Category A pesticides.

This licence will automatically confer the right to sell Categories B, C, and D pesticides.

**VENDOR LICENCE II** —Maximum yearly fee \$15.00.

Each establishment making sales to the final user of Category B pesticides.

This licence will not allow sales of Category A pesticides, but will allow sales of Category C and D pesticides.

**VENDOR LICENCE III**— Maximum yearly fee \$10.00.

Each establishment making sales to the final user of Category C pesticides.

This licence will not allow sales of Category A or Category B pesticides, but will allow the sales of Category D pesticides.

In the above licence arrangement formulators and those who distribute pesticides for resale will, if they also make sales to end users, find it necessary to obtain both a Bulk Licence and an appropriate level of Vendor Licence. In such cases, these firms will have to maintain the minimum requirements of both licences.

The committee does not regard this as objectionable since the distribution for resale and the end user sale require different types of controls. This division was made to avoid imposing vendor requirements on formulators and bulk distributors unless end user sales are made.

The Bulk Licence is issued to the firm involved while the Vendor Licence is issued to the individual premise. The difference in the level of maximum fees suggested reflects the fact that licence requirements are largely procedural for formulators and bulk distributors, while the requirements for vendors concentrate on premises.

### **Bulk Licence Requirements**

#### **Limitations on Sale or Transfer**

A holder of a Bulk Licence will sell or otherwise transfer Category A, Category B, and Category C only to

- (a) a holder of a Bulk Licence; or
- (b) to an establishment duly licensed as a vendor at a level of Vendor Licence ap-

propriate to the classification of the pesticides transferred.

### **Records of Transfers**

The holder of a Bulk Licence will maintain a register or similar record of the sale of all pesticides in Category A and Category B which will contain:

- (a) the name of the firm or establishment to which transfer has been made
- (b) the licence number (either Bulk Licence or Vendor Licence) of the firm or establishment to which transfer has been made
- (c) description of the pesticides transferred including name, category, unit size and number of units of each pesticide transferred
- (d) the date of transfer
- (e) the method of transfer, including the name of the carrier used.

NOTE: The Bulk Licence should also contain minimum requirements for all categories of pesticides regarding:

- 1) storage, including separation by classification and from ingestible products, security of storage areas, and appropriate notification of local fire authorities. Bulk storage and associated fire hazards are currently being reviewed by the Ontario Pesticides Advisory Committee, and their report will augment this section.
- 2) waste disposal of pesticides and of empty pesticide containers.
- 3) Packaging requirements for both unit and multiple packages.
- 4) Personnel requirements including protective clothing.
- 5) Safety precautions and equipment to be available in case of accident - fire, dust, inhalation, etc.
- 6) Transportation requirements for receipt and shipping of pesticides.

### **Vendor Licence Requirements**

All sales and/or transfers of pesticides of Category A and/or Category B and/or Category C to the end user will be restricted to premises duly licensed as vendors and holding a class of vendor licence appropriate to the category of pesticide transferred. The sale and/or transfer of Category D pesticides will not be restricted to licensed premises.

It shall be a requirement for the procurement and maintenance of a vendor licence of any class that certain minimum standards appropriate to the class of licence be maintained by the operators of the licensed premises. These standards shall apply both to the physical facilities for the handling of pesticides within the licensed premises and to the procedures governing the actual transfer of pesticides.

The following recommendations should be considered basic to the maintenance of a vendor's licence:

#### *Limitations on Sale and/or Transfer*

- (a) Category A pesticides will only be sold and/or transferred for final use through

premises holding a Vendor Licence—Class I, and such transfers will be governed by special standards appropriate to Category A pesticides set out below.

- (b) Category B pesticides will only be sold/or transferred for final use through premises holding a Vendor Licence — Class I or a Vendor Licence — Class II, and such transfers will be governed by special standards appropriate to Category B pesticides set out later herein.
- (c) Category C pesticides will only be sold and/or transferred for final use through premises holding a Vendor Licence—Class I or a Vendor Licence—Class II or a Vendor Licence—Class III, and such transfers will be governed by special standards appropriate to Category C pesticides set out later herein.

#### *Storage on Licensed Premises*

- (a) All pesticides shall be stored in an area and in a way that prevents contamination of food, feed, or drink for humans or animals.
- (b) Storage areas shall be posted with a warning sign noting that pesticides are stored therein and that they may only be handled by authorized personnel.
- (c) Emergency telephone numbers of the local fire department and poison control centre must be posted prominently outside pesticide storage areas.
- (d) Storage areas must be maintained in a clean and orderly manner sufficient to prevent cross contamination, air, soil, and water contamination, and injury to personnel.
- (e) Storage areas of Category A and Category B pesticides only will conform to the following additional standards:
  - Storage area must be adequately ventilated..
  - Safety clothing and equipment must be readily available to the storage area in case of accident.
  - Storage area must be secured by a lock when unattended.
  - Local fire officials must be notified on a form provided by the Department of the Environment.

#### *Personnel of Licensed Premises*

It shall be the responsibility of the proprietor and/or manager of a licensed premise to ensure that all personnel of the licensed premise handling pesticides

- (a) are conversant with all regulations governing the sale of pesticides
- (b) are familiar with the transaction records under these regulations
- (c) are exposed to all educational bulletins and/or posters that may be circulated from time to time by the Department of the Environment.
- (d) are not allowed to handle edible materials or products at the same time that pesticides are handled (and that adequate facilities are available for personnel clean-up after handling pesticides).

#### *Security of Packages on Transfer*

No pesticide shall be sold and/or transferred in a container and/or package

- (a) which has been damaged sufficiently to endanger the security of the contents or which for any other reason has been found to be structurally insecure; or
- (b) upon which any portion of the label has been rendered unreadable.

#### *Display in Licensed Premises*

- (a) No Category A or Category B pesticide substance will be displayed to the public.
- (b) Category C pesticides may be displayed to the public on licensed premises only under the following conditions:
  - The display must be secured in a display case or behind glass or mesh doors to prevent handling of the pesticides or their containers by children.
  - Such pesticides must be entirely separate from displays of other merchandise except Category D pesticides.

#### *Delivery of Pesticides*

All pesticides must be transferred in a manner which will prevent contamination of other goods during delivery.

#### *Disposal*

Waste pesticides including empty pesticide containers must be disposed of in a manner approved by the Department of the Environment.

### **SPECIAL RULES GOVERNING THE TRANSFER OF CATEGORY A PESTICIDES**

- 1) Sale and/or transfer of Category A pesticides to end users will be restricted to those premises holding a Vendor Licence—Class I.
- 2) Category A pesticides shall be sold and/or transferred only to:
  - (a) another premise with a Vendor Licence—Class I
  - (b) persons who have obtained a permit for purchase from the Ontario Department of the Environment or its designates
  - (c) a holder of a bulk licence.
- 3) The sale or transfer of Category A pesticides to end users from licensed premises shall be recorded at the time of sale on a form consistent to that described hereafter as ‘Vendor Transfer Records’.

### **SPECIAL RULES GOVERNING THE TRANSFER OF CATEGORY B PESTICIDES**

- 1) Sale and/or transfer of Category B pesticides to end users will be restricted to those premises holding either a Vendor Licence—Class I or a Vendor Licence—Class II.
- 2) Category B pesticides shall be sold and/or transferred only to

- (a) another premise with a Vendor Licence—Class I or a Vendor Licence—Class II
- (b) a duly licensed exterminator
- (c) persons who have obtained a permit for purchase from the Ontario Department of the Environment or its designates
- (d) agriculturalists
- (e) a holder of a bulk licence

*Note: Exceptions to government and research institutions are recognized.*

- 3) The sale or transfer of Category B pesticides to end users from licensed premises shall be recorded at the time of transfer in a form consistent to that described hereafter as 'Vendor Transfer Records'.

### **SPECIAL RULES GOVERNING THE TRANSFER OF CATEGORY C PESTICIDES**

- 1) Sale and/or transfer of Category C pesticides to end users will be restricted to those premises holding a Vendor Licence—Class I, Vendor Licence—Class II, or Vendor Licence—Class III.

### **VENDOR TRANSFER RECORDS**

Vendors licensed to sell and/or transfer Category A and/or Category B pesticides will keep a register or similar record of each sale of such materials which will include

- 1) the name and address of the person or firm to whom transfer is made
- 2) a further description of the person or firm to whom transfer is made which will be taken to mean one of the following:
  - (a) in the case of transfers to other licence holders, the number and type of licence
  - (b) in the case of transfers to permit holders, the number of such permit
  - (c) in the case of transfer to agriculturalists, the name of the crop on which it is intended to be used
- 3) description of the pesticide sold including name, category, unit size and number of units of each pesticide sold and/or transferred
- 4) the date of the sale and/or transfer
- 5) the initials of the person in the employ of the licensed premises effecting the sale and/or transfer.



CLASSIFICATION OF PESTICIDES—Table 1

| Code             | Materials                             | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks |
|------------------|---------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|---------|
|                  |                                       |     | Category A                          | Category B                          | Category C                                      | Category D                            |         |
| FUNGICIDES (Fun) |                                       |     |                                     |                                     |                                                 |                                       |         |
| AAL              | allyl alcohol                         | Fun |                                     | All                                 |                                                 |                                       |         |
| ANH              | anthracene oil                        | Fun |                                     |                                     | All                                             |                                       |         |
| AUR              | auramine                              | Fun |                                     |                                     | All                                             |                                       |         |
| BTD              | benzothiazyl disulfide                | Fun |                                     |                                     | All                                             |                                       |         |
| BRL              | binapacryl                            | Fun |                                     | >10%                                | ≤10%                                            |                                       |         |
| BTO              | bis (tri-N-butyltin) oxide            | Fun |                                     | > 1%                                | ≤ 1%                                            |                                       |         |
| BOA              | boracic acid                          | Fun |                                     |                                     |                                                 | All                                   |         |
| BNS              | borax                                 | Fun |                                     |                                     |                                                 | All                                   |         |
| CDD              | cadmium chloride                      | Fun |                                     | All                                 |                                                 |                                       |         |
| CDS              | cadmium sebacate                      | Fun |                                     | All                                 |                                                 |                                       |         |
| CDU              | cadmium succinate                     | Fun |                                     | All                                 |                                                 |                                       |         |
| CAP              | captan                                | Fun |                                     |                                     | > 5%                                            | ≤ 5%                                  |         |
| CHR              | chloranil                             | Fun |                                     | > 5%                                | ≤ 5%                                            |                                       |         |
| CNB              | chloroneb                             | Fun |                                     |                                     | All                                             |                                       |         |
| CPC              | chloro-o-phenylphenol                 | Fun |                                     | > 5%                                | ≤ 5%                                            |                                       |         |
| CPN              | chloropicrin                          | Fun | > 1%                                | ≤ 1%                                |                                                 |                                       |         |
| CUN              | copper naphenate                      | Fun |                                     |                                     | All                                             |                                       |         |
| CUY              | copper oxychloride                    | Fun |                                     | >30%                                | ≤30%                                            |                                       |         |
| CUC              | copper oxychloride sulphate           | Fun |                                     | >30%                                | ≤30%                                            |                                       |         |
| CUR              | copper salts of rosin and fatty acids | Fun |                                     |                                     | All                                             |                                       |         |
| CUS              | copper sulfate crystals               | Fun |                                     |                                     | All                                             |                                       |         |
| CUM              | copper sulphate monohydrate           | Fun |                                     | >30%                                | ≤30%                                            |                                       |         |
| CRT              | creosote                              | Fun |                                     |                                     | All                                             |                                       |         |
| CRA              | creylic acid                          | Fun |                                     |                                     | All                                             |                                       |         |
| CUZ              | cupric hydroxide                      | Fun |                                     | >30%                                | ≤30%                                            |                                       |         |
| CYC              | cycloheximide                         | Fun |                                     | >0.75%                              | ≤0.75%                                          |                                       |         |
| DAZ              | dazomet                               | Fun |                                     | >35%                                | ≤35%                                            |                                       |         |
| DCH              | dichlone                              | Fun |                                     |                                     | All                                             |                                       |         |

|     |                                                          |     |      |      |      |      |
|-----|----------------------------------------------------------|-----|------|------|------|------|
| DIR | dichloran                                                | Fun |      |      | All  |      |
| DPH | dichlorophen                                             | Fun |      |      | All  |      |
| DFT | difolatan                                                | Fun |      | All  |      |      |
| DEX | p-dimethylaminobenzenediazo<br>sodium sulfonate          | Fun |      | >10% | ≤10% |      |
| DNP | dinitrophenol                                            | Fun |      | > 5% | ≤ 5% |      |
| DIN | dinocap                                                  | Fun |      | >10% | ≤10% |      |
| DNB | dinoseb                                                  | Fun |      | > 5% | ≤ 5% |      |
| DNT | disodium octoborate tetrahydrate                         | Fun |      |      | All  |      |
| DNC | DNOC                                                     | Fun |      | > 5% | ≤ 5% |      |
| DOD | dodine                                                   | Fun |      |      | All  |      |
| DYR | Dyrene                                                   | Fun |      |      | All  |      |
| EMC | ethylmercuric chloride                                   | Fun | All  |      |      |      |
| EMS | ethyl mercury p-toluene sulfonanilide                    | Fun | All  |      |      |      |
| FER | ferbam                                                   | Fun |      |      | All  |      |
| FOL | folpet                                                   | Fun |      |      | > 5% | ≤ 5% |
| FOR | formaldehyde                                             | Fun |      |      | All  |      |
| GLY | glyodin                                                  | Fun |      |      | All  |      |
| HCB | hexachlorobenzene                                        | Fun |      | All  |      |      |
| HCP | hexochlorophene                                          | Fun |      | > 5% | ≤ 5% |      |
| HMC | hydroxymercurichlorophenol                               | Fun | All  |      |      |      |
| HMN | hydroxymercurinitrophenol                                | Fun | All  |      |      |      |
| MAG | malachite green                                          | Fun |      | >10% | ≤10% |      |
| MCZ | mancozeb                                                 | Fun |      |      | All  |      |
| MAN | maneb                                                    | Fun |      |      | All  |      |
| MBM | manganous benzoethiozylmercaptide                        | Fun |      |      | All  |      |
| MDD | manganous bis (dimethyldithio-<br>carbamate)             | Fun |      |      | All  |      |
| MCC | mercuric chloride                                        | Fun | >30% | ≤30% | ≤10% |      |
| MSC | mercurous chloride                                       | Fun | >30% | ≤30% | ≤10% |      |
| MBR | methyl bromide                                           | Fun | All  |      |      |      |
| MDB | methyl dodecyl benzyl trimethyl<br>ammonium chloride     | Fun |      |      | >10% | ≤10% |
| MDX | methyl dodecyl xylene bis trimethyl<br>ammonium chloride | Fun |      |      | >10% | ≤10% |
| MIS | methyl isothiocynate (Volex)                             | Fun |      | All  |      |      |
| MMA | methylmercuric acetate                                   | Fun | All  |      |      |      |
| MMB | methylmercuric benzoate                                  | Fun | All  |      |      |      |
| MMD | methylmercuric dicyandimide                              | Fun | All  |      |      |      |

Table 1 – continued

| Code | Materials                                       | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks |
|------|-------------------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|---------|
|      |                                                 |     | Category A                          | Category B                          | Category C                                      | Category D                            |         |
| MMP  | methyl mercury, 2,3-dihydroxy propyl mercaptide | Fun | All                                 |                                     |                                                 |                                       |         |
| MMO  | methylmercury pentachlorophenolate              | Fun | All                                 |                                     |                                                 |                                       |         |
| MMT  | methyl mercury propionate                       | Fun | All                                 |                                     |                                                 |                                       |         |
| MTR  | metriam                                         | Fun |                                     |                                     | All                                             |                                       |         |
| NAB  | nabam                                           | Fun |                                     | All                                 |                                                 |                                       |         |
| HQB  | oxine benzoate                                  | Fun |                                     | >10%                                | ≤10%                                            |                                       |         |
| MMH  | oxine-methylmercury                             | Fun | All                                 |                                     |                                                 |                                       |         |
| PFH  | paraformaldehyde                                | Fun |                                     |                                     | All                                             |                                       |         |
| PCP  | pentachlorophenols                              | Fun |                                     | >20%                                | ≤20%                                            |                                       |         |
| PCS  | pentachlorophenols                              | Fun |                                     | >20%                                | ≤20%                                            |                                       |         |
| PAC  | phenyl amino cadmium dilactate                  | Fun |                                     | All                                 |                                                 |                                       |         |
| PMA  | phenylmercuric acetate                          | Fun |                                     | All                                 |                                                 |                                       |         |
| PML  | phenyl mercuric lactate                         | Fun |                                     | All                                 |                                                 |                                       |         |
| PMF  | phenyl mercury formamide                        | Fun |                                     | All                                 |                                                 |                                       |         |
| PMO  | phenyl mercury oleate                           | Fun |                                     | All                                 |                                                 |                                       |         |
| PMT  | phenyl mercury triethanol ammonium lactate      | Fun |                                     | All                                 |                                                 |                                       |         |
| KCR  | potassium chromate                              | Fun |                                     |                                     | All                                             |                                       |         |
| PTX  | plantvax                                        | Fun |                                     | > 5%                                | ≤ 5%                                            |                                       |         |
| QTZ  | quintozone                                      | Fun |                                     |                                     | All                                             |                                       |         |
| RBD  | rhodandinitobenzene                             | Fun |                                     | > 5%                                | ≤ 5%                                            |                                       |         |
| SMM  | sodium metaborate octahydrate                   | Fun |                                     | >20%                                | ≤20%                                            |                                       |         |
| STC  | sodium tetrachlorophenate                       | Fun |                                     | >20%                                | ≤20%                                            |                                       |         |
| STN  | streptomycin                                    | Fun |                                     |                                     | All                                             |                                       |         |
| SUS  | sulphide sulphur (lime sulphur)                 | Fun |                                     |                                     | All                                             |                                       |         |
| SUL  | sulphur                                         | Fun |                                     |                                     |                                                 | All                                   |         |
| TET  | tetrachlorisophthalonitrile                     | Fun |                                     |                                     | All                                             |                                       |         |

|     |                          |     |      |      |
|-----|--------------------------|-----|------|------|
| TCP | tetrachlorophenol        | Fun | >20% | ≤20% |
| THI | thiram                   | Fun | >50% | ≤50% |
| CUB | tribasic copper sulphate | Fun | >30% | ≤30% |
| VIT | Vitavax                  | Fun |      | All  |
| ZNN | zinc naphthenate         | Fun |      | All  |
| ZPS | zinc petroleum sulfonate | Fun |      | All  |
| ZIN | zineb                    | Fun |      | All  |
| ZIR | ziram                    | Fun |      | All  |

### HERBICIDES (H)

|     |                            |   |      |       |       |     |
|-----|----------------------------|---|------|-------|-------|-----|
| AAL | allyl alcohol              | H |      | All   |       |     |
| AMI | amitrole                   | H |      |       | All   |     |
| AMA | ammonium methyl arsonates  | H |      | >0.1% | ≤0.1% |     |
| AMS | ammonium sulfamate         | H |      |       | All   |     |
| ATR | atrazine                   | H |      | All   |       |     |
| LAS | alachlor                   | H |      | All   |       |     |
| BAR | barban                     | H |      | All   |       |     |
| BAL | benefin (Balan)            | H |      | All   |       |     |
| BET | bensulide                  | H |      |       | All   |     |
| BOA | boracic acid               | H |      |       |       | All |
| BNS | borax mixtures             | H |      |       |       | All |
| BNA | borax anhydrous            | H |      |       |       | All |
| BNP | boran pentahydrate         | H |      |       |       | All |
| BBU | bromacil                   | H |      | All   |       |     |
| BRY | bromoxynil                 | H |      | All   |       |     |
| BDX | Bladex                     | H |      | All   |       |     |
| BEN | Benazolin                  | H |      | All   |       |     |
| CAC | cacodylic acid             | H |      | All   |       |     |
| SUA | CDEC (Vegadex)             | H |      | All   |       |     |
| CHA | chloramben                 | H |      | All   |       |     |
| CPN | chloropicrin               | H | > 1% | ≤ 1%  |       |     |
| CLX | chloroxuron                | H |      | All   |       |     |
| CIP | chlorpropham               | H |      |       | All   |     |
| CHL | chlorthal                  | H |      |       | All   |     |
| CUM | copper sulfate monohydrate | H |      | >30%  | ≤30%  |     |
| CBU | chlorbromuron              | H |      | All   |       |     |
| DXA | 2,4-D                      | H |      |       | All   |     |
| DXB | 2,4-D amines               | H |      |       | All   |     |

Table 1 – continued

| Code | Materials                          | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks               |
|------|------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|-----------------------|
|      |                                    |     | Category A                          | Category B                          | Category C                                      | Category D                            |                       |
| BNT  | disodium octaborate tetrahydrate   | H   |                                     |                                     | All                                             |                                       |                       |
| DAL  | dalapon                            | H   |                                     |                                     | All                                             |                                       |                       |
| DAZ  | dazomet                            | H   |                                     | > 35%                               | ≤ 35%                                           |                                       |                       |
| DXE  | 2,4-D esters                       | H   | All                                 | All                                 |                                                 |                                       | LVE 'B' OTHERS<br>'A' |
| DXS  | 2,4-D salt                         | H   |                                     | All                                 |                                                 |                                       |                       |
| DPB  | 2,4-DB (butyl ester)               | H   |                                     | All                                 |                                                 |                                       |                       |
| DXO  | N-oley 1, 3-propylene diamine salt | H   |                                     | All                                 |                                                 |                                       |                       |
| DIL  | diallate                           | H   |                                     | All                                 |                                                 |                                       |                       |
| DIC  | dicamba                            | H   |                                     | > 3%                                | ≤ 3%                                            |                                       |                       |
| DCB  | dichlobenil                        | H   |                                     | All                                 |                                                 |                                       |                       |
| DIG  | dichlorprop mixtures               | H   |                                     | All                                 |                                                 |                                       |                       |
| DIH  | dichlorprop-2,4-D esters           | H   |                                     | All                                 |                                                 |                                       | LVE only              |
| DNB  | dinoseb                            | H   |                                     | > 5%                                | ≤ 5%                                            |                                       |                       |
| DIP  | diphenamid                         | H   |                                     | All                                 |                                                 |                                       |                       |
| DIQ  | diquat                             | H   |                                     | All                                 |                                                 |                                       |                       |
| DES  | disul (sodium)                     | H   |                                     |                                     | All                                             |                                       |                       |
| DNC  | DNOC                               | H   |                                     | > 5%                                | ≤ 5%                                            |                                       |                       |
| DNP  | DNP                                | H   |                                     | > 5%                                | ≤ 5%                                            |                                       |                       |
| DUR  | diuron                             | H   |                                     | All                                 |                                                 |                                       |                       |
| DMA  | disodium methyl arsonate           | H   |                                     |                                     | All                                             |                                       |                       |
| EPT  | eptam                              | H   |                                     |                                     | All                                             |                                       |                       |
| ERB  | erbon                              | H   |                                     | All                                 |                                                 |                                       |                       |
| ENT  | endothall                          | H   |                                     | All                                 |                                                 |                                       |                       |
| FEN  | fenuron                            | H   |                                     | All                                 |                                                 |                                       |                       |
| FNP  | fenoprop                           | H   |                                     |                                     | All                                             |                                       |                       |
| FES  | ferrous sulfate                    | H   |                                     |                                     |                                                 | All                                   |                       |
| FNC  | fenac                              | H   |                                     | All                                 |                                                 |                                       |                       |
| HCY  | hydrogen cyanamide                 | H   |                                     | All                                 |                                                 |                                       |                       |
| LUN  | linuron                            | H   |                                     | All                                 |                                                 |                                       |                       |

|     |                                  |   |     |      |      |          |
|-----|----------------------------------|---|-----|------|------|----------|
| MAB | MCPA, amines                     | H |     |      | All  |          |
| MAE | MCPA, esters                     | H |     | All  |      | LVE only |
| MAS | MCPA, salts                      | H |     |      | All  |          |
| MBS | MCPB, salts                      | H |     |      | All  |          |
| MEC | mecoprop salts                   | H |     |      | All  |          |
| MTM | metam (sodium)                   | H |     |      | All  |          |
| MBR | methyl bromide                   | H | All |      |      |          |
| MIS | methyl isothiocyanate            | H |     | All  |      |          |
| PAT | metobromuron                     | H |     | All  |      |          |
| MTH | methachlor                       | H |     | All  |      |          |
| MOH | mineral oil (herbicidal)         | H |     |      |      | All      |
| MSM | monosodium acid methane arsonate | H |     |      | All  |          |
| CMA | monuron-TCA                      | H |     | All  |      |          |
| MON | monuron                          | H |     | All  |      |          |
| NAP | naptalam                         | H |     | All  |      |          |
| NEB | neburon                          | H |     | All  |      |          |
| PLA | nitralin                         | H |     | All  |      |          |
| TOK | nitrofen                         | H |     | All  |      |          |
| PRQ | paraquat                         | H |     | > 3% | ≤ 3% |          |
| TIL | pebulate                         | H |     | All  |      |          |
| PMA | phenyl mercuric acetate          | H |     | All  |      |          |
| TOR | picloran, amines                 | H | All |      |      |          |
| TOS | picloran, salts (inorganic)      | H | All |      |      |          |
| KCT | potassium cyanate                | H |     | All  |      |          |
| PRM | prometone                        | H |     |      | All  |          |
| PRO | prometryne                       | H |     | All  |      |          |
| RRD | propachlor                       | H |     | All  |      |          |
| PRL | propanil                         | H |     | All  |      |          |
| PCP | pentachlorophenols               | H |     | >20% | ≤20% |          |
| PCS | pentachlorophenols               | H |     | >20% | ≤20% |          |
| PRF | propham                          | H |     | All  |      |          |
| PYZ | Pyrazon                          | H |     | All  |      |          |
| RAN | Randox                           | H |     | All  |      |          |
| ROE | Ro-Neet                          | H |     | All  |      |          |
| TRS | siduron (Tubersan)               | H |     |      | All  |          |
| SMZ | simazine                         | H |     | All  |      |          |
| SAR | sodium arsenite (arsenic)        | H | All |      |      |          |
| SCL | sodium chlorate, mixtures        | H |     | All  |      |          |
| SCC | sodium-chlorine complex          | H |     | All  |      |          |
| SMP | sodium metaborate pentahydrate   | H |     | >20% | ≤20% |          |
| SMT | sodium metaborate tetrahydrate   | H |     | >20% | ≤20% |          |

Table 1 – continued

| Code             | Materials                                  | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks            |
|------------------|--------------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|--------------------|
|                  |                                            |     | Category A                          | Category B                          | Category C                                      | Category D                            |                    |
| SMB              | sodium metaborate                          | H   |                                     | >20%                                | ≤20%                                            |                                       |                    |
| SLN              | solan                                      | H   |                                     | All                                 |                                                 |                                       |                    |
| SUT              | sutan                                      | H   |                                     | All                                 |                                                 |                                       |                    |
| SUA              | sulfallate                                 | H   |                                     | All                                 |                                                 |                                       |                    |
| TXB              | 2,4,5-T amines                             | H   |                                     | All                                 |                                                 |                                       |                    |
| TAN              | tandex                                     | H   |                                     | All                                 |                                                 |                                       |                    |
| TXE              | 2,4,5-T esters                             | H   |                                     | All                                 |                                                 |                                       |                    |
| AZK              | terbutol (Azak)                            | H   |                                     |                                     | All                                             |                                       |                    |
| TRL              | triallate                                  | H   |                                     | All                                 |                                                 |                                       |                    |
| TCS              | trichloro acetic acid                      | H   |                                     |                                     | All                                             |                                       |                    |
| TBA              | trichlorobenzoic acid                      | H   |                                     | All                                 |                                                 |                                       |                    |
| FNC              | 2,3,6-trichloro phenyl acetic acid         | H   |                                     | All                                 |                                                 |                                       |                    |
| TRF              | trifluralin                                | H   |                                     |                                     | All                                             |                                       |                    |
| TXO              | N-oley1 1,3-propylene diamine salt         | H   |                                     | All                                 |                                                 |                                       |                    |
| TER              | Terbacil, Sinbar                           | H   |                                     | All                                 |                                                 |                                       |                    |
| VER              | S-propyl dipropylthio carbamate            | H   |                                     | All                                 |                                                 |                                       |                    |
| VLT              | vernolate                                  | H   |                                     | All                                 |                                                 |                                       |                    |
| INSECTICIDES (I) |                                            |     |                                     |                                     |                                                 |                                       |                    |
| ABT              | Abate                                      | I   |                                     |                                     | All                                             |                                       |                    |
| ACR              | acrylonitrile                              | I   |                                     | All                                 |                                                 |                                       |                    |
| ALP              | aluminum phosphide (Phostoxin)             | I   | All                                 |                                     |                                                 |                                       | Special Exemptions |
|                  | aldicarb (Temik)                           | I   | All                                 |                                     |                                                 |                                       |                    |
| ALD              | aldrin                                     | I   | All                                 |                                     |                                                 |                                       |                    |
| ALN              | allethrin                                  | I   |                                     |                                     |                                                 | All                                   |                    |
| ANH              | anthracene oil                             | I   |                                     |                                     |                                                 | All                                   |                    |
| SIL              | amorphous silica aergel (Dri-Die-Driaxone) | I   |                                     |                                     |                                                 | All                                   |                    |
| ANY              | antimonyl potassium tartrate               | I   | All                                 |                                     |                                                 |                                       |                    |
| LAR              | arsenicals (lead)                          |     |                                     |                                     |                                                 |                                       |                    |
| CAR              | arsenicals (calcium)                       | I   |                                     | All                                 |                                                 |                                       |                    |
| GOE              | azinphosethyl (Ethyl Guthion)              | I   |                                     | All                                 |                                                 |                                       |                    |

|     |                                                    |   |      |         |        |         |
|-----|----------------------------------------------------|---|------|---------|--------|---------|
| GOO | azinthosmethyl (Guthion)                           | I |      | All     |        |         |
| AZO | Azobenzene                                         | I |      | All     |        |         |
| ARA | ARAMITE                                            | I |      | All     |        |         |
| BTB | B,thuriensis (Thuricide)                           | I |      |         | All    |         |
| BAY | Bay 39007 (Baygon)                                 | I |      | >10%    | ≤10%   | ≤ 1%    |
| BZE | benzene                                            | I |      |         | All    |         |
| BBE | benzyl benzoate                                    | I |      |         | All    |         |
| BHC | benzene hexachloride - (1 γ-BHC, γ-HCH, Gamaexane) | I | >75% | ≤75%    | ≤ 5%   | ≤0.2%   |
| LIN | benzene hexachloride- (2 lindane)                  | I | >75% | ≤75%    | ≤ 5%   | ≤0.2%   |
| BRL | binapacryl (Morocide)                              | I |      | >10%    | ≤10%   |         |
| BNS | borax                                              | I |      |         |        | All     |
| BNA | borax anhydrous                                    | I |      |         |        | All     |
| BOA | boric acid                                         | I |      |         |        | All     |
|     | bromophos (Nexion) 25% WP                          | I |      | All     |        |         |
| BUX | Bux                                                |   |      | All     |        |         |
| BUY | Bux                                                | I |      | All     |        |         |
| HCN | calcium cyanide (Cyanogas)                         | I | All  |         |        |         |
| CAB | carbaryl (Sevin)                                   | I |      |         | >20%   | ≤20%    |
| CAF | carbofuran (Furadan)                               | I |      | All     |        |         |
| CAD | carbon disulphide                                  | I |      | All     |        |         |
| CPT | carbophenothion Trithion                           | I |      | All     |        |         |
| CPN | chloropicrin                                       | I | > 1% | ≤ 1%    |        |         |
| CLD | chlordane                                          | I |      | >50%    | ≤50%   |         |
| CHD | chlordecone (Kepone)                               | I |      | >0.125% |        | ≤0.125% |
| CFV | chlorfenvinphos (Birlane, Supona)                  | I |      | All     |        |         |
| CPZ | chlorobenzilate                                    | I |      | All     |        |         |
| CIN | Ciodrin (crotoxyphos)                              | I |      | >10%    | ≤10%   |         |
| COA | coal tar acids                                     | I |      |         |        | All     |
| COO | coal tar oils                                      | I |      |         |        | All     |
| COU | coumaphos (Co-Ral)                                 | I |      | >0.5%   | ≤0.5%  |         |
| CRT | creosote                                           | I |      |         | All    |         |
| CRA | creylic acid                                       | I |      |         | All    |         |
| DDT | DDT                                                | I | All  |         |        |         |
| DEM | demeton (Systox)                                   | I |      | All     |        |         |
| DIA | diazinon (Basudin)                                 | I |      | >12.5%  | ≤12.5% |         |
| VCR | dichlorophenyl diethyl phosphorothioate            | I |      | All     |        |         |
| DVP | dichlorvos (Vapona,DDVP)                           | I |      | >15%    | ≤15%   |         |
| KEL | dicofol (Kelthane)                                 | I |      | > 4%    | ≤ 4%   |         |
| DIE | dieldrin                                           | I | All  |         |        |         |
| DIM | dimethoate (Cygon)                                 | I |      | >40%    | ≤40%   |         |

Resin Strips &  
Paraffin Block



Table 1 – continued

| Code | Materials                                    | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks |
|------|----------------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|---------|
|      |                                              |     | Category A                          | Category B                          | Category C                                      | Category D                            |         |
| DMD  | dimetilon (Snip)                             | I   |                                     | 285 mg./ft.                         |                                                 |                                       |         |
| DNC  | dinitrocresol (DNOC)                         | I   |                                     | All                                 |                                                 |                                       |         |
| DIN  | dinocap (Karathane)                          | I   |                                     | >10%                                | ≤10%                                            |                                       |         |
| DNB  | dinoseb                                      | I   |                                     | >5%                                 | ≤5%                                             |                                       |         |
| DIS  | disulfoton (Di-Syston)                       | I   |                                     | All                                 |                                                 |                                       |         |
| DUB  | Dursban                                      | I   |                                     | >15%                                | ≤15%                                            |                                       |         |
| DPA  | diphenylamine                                | I   |                                     | All                                 |                                                 |                                       |         |
| BNT  | disodium octaborate tetrahydrate             | I   |                                     |                                     | All                                             |                                       |         |
| DNP  | dinitrophenol                                | I   |                                     | >5%                                 | ≤5%                                             |                                       |         |
| ESF  | endosulfan (Thiodan)                         | I   |                                     | >5%                                 | ≤5%                                             |                                       |         |
| END  | endrin                                       | I   | All                                 |                                     |                                                 |                                       |         |
| ETH  | ethion                                       | I   |                                     | >5%                                 | ≤5%                                             |                                       |         |
| EDB  | Ethylene dibromide                           | I   |                                     | >20%                                | ≤20%                                            |                                       |         |
| EDC  | Ethylene dichloride                          | I   |                                     |                                     | All                                             |                                       |         |
| FEM  | fenitrothion (Accothion) (Folithion)         | I   |                                     | All                                 |                                                 |                                       |         |
| FEL  | fensulfothion (Dasanit)                      | I   | >15%                                | ≤15%                                |                                                 |                                       |         |
| FET  | fenthion (A Queletop, I Baytex,<br>DR Entex) | I   |                                     | >5%                                 | ≤5%                                             | ≤1%                                   |         |
| DYF  | fonofos (Dyfonate)                           | I   |                                     | All                                 |                                                 |                                       |         |
| FUN  | Fundal (Chlorphenamidine)                    | I   |                                     | >30%                                | ≤30%                                            |                                       |         |
| GAL  | Galecron (Chlorphenamidine)                  | I   |                                     | >30%                                | ≤30%                                            |                                       |         |
| HEP  | Heptachlor                                   | I   | All                                 |                                     |                                                 |                                       |         |
| HCN  | hydrocyanic acid                             | I   | All                                 |                                     |                                                 |                                       |         |
| SOA  | insecticidal soaps                           | I   |                                     |                                     |                                                 | All                                   |         |
| LER  | lethane                                      | I   |                                     | >2%                                 | ≤2%                                             | ≤5%                                   |         |
| LES  |                                              |     |                                     |                                     |                                                 |                                       |         |
| LOV  | Lovoza 20W                                   | I   |                                     | All                                 |                                                 |                                       |         |
| TSF  | MGK 264 (Synergist)                          | I   |                                     |                                     |                                                 | All                                   |         |
| MIT  | mitin                                        | I   |                                     |                                     | All                                             |                                       |         |

|     |                                               |   |      |       |       |      |
|-----|-----------------------------------------------|---|------|-------|-------|------|
| MAL | malathion                                     | I |      | >65%  | ≤65%  | ≤10% |
| MEN | menazon (Saphos)                              | I |      | >7.4% | ≤7.4% |      |
| VAP | metam-sodium                                  | I |      |       | All   |      |
| MML | methomyl (Lannate)                            | I |      | All   |       |      |
| MET | methoxychlor                                  | I |      |       | 2%    | 2%   |
| MBR | methyl bromide                                | I | All  |       |       |      |
| MIS | methyl isothiocyanate (Vorlex)                | I |      | All   |       |      |
| MOR | oxythioquinox (Morestan)                      | I |      |       | All   |      |
| MGK | N-octyl bicycloheptene dicarboximide          | I |      |       |       | All  |
| NAL | naled (Dibrom)                                | I |      | >50%  | ≤50%  |      |
| NIA | nicotine                                      | I |      | All   |       |      |
| NPH | naphthalene                                   | I |      |       |       | All  |
| NPI | N-propyl isome (Synergist)                    | I |      |       |       | All  |
| ODB | orthodichlorobenzene                          | I |      | >50%  | ≤50%  |      |
| OVX | ovex (Ovotran, chlorfenson)                   | I |      | > 1%  | ≤ 1%  |      |
| MSR | oxydemetonmethyl (Meta-Systox R)              | I |      | > 5%  | ≤ 5%  |      |
| OMI | Omite                                         | I |      |       | All   |      |
| PBU | piperonyl butoxide (Synergist)                | I |      |       |       | All  |
| PCP | pentachlorophenol                             | I |      | >20%  | ≤20%  |      |
| PCS | pentachlorophenol – related                   | I |      | >20%  | ≤20%  |      |
| PDB | paradichlorobenzene                           | I |      |       | > 5%  | ≤ 5% |
| PTH | parathion-ethyl                               | I |      | All   |       |      |
| PTH | parathion-methyl (Metacide)                   | I |      | All   |       |      |
| BPC | Pentac                                        | I |      |       | All   |      |
| PRH | Perthane                                      | I |      | >10%  |       | ≤10% |
| MOI | mineral oils                                  | I |      |       |       | All  |
| PHR | phorate (Thimet)                              | I | >15% | ≤15%  |       |      |
| PHS | phosalone (Zolone)                            | I |      | >25%  | ≤25%  |      |
| IMI | Phosmet (Imidan)                              | I |      | All   |       |      |
| PHF | phosphamidon (Dimecron)                       | I |      | > 3%  | ≤ 3%  |      |
| DHS | pinene ether                                  | I |      |       |       | All  |
| PBT | piperonal                                     | I |      |       | >10%  | ≤10% |
| PCY | piperonyl cyclonene                           | I |      |       |       | All  |
| PLT | Plictran                                      | I |      | All   |       |      |
| PYR | pyrethrins                                    | I |      |       | > 1%  | ≤ 1% |
| PBU | piperonyl butoxide                            | I |      |       | >10%  | ≤10% |
| RON | ronnel                                        | I |      | > 5%  | ≤ 5%  |      |
| ROT | rotenone                                      | I |      | > 5%  | ≤ 5%  |      |
| RUE | Ruelene (crufomate)                           | I | >24% | ≤24%  |       |      |
| RYA | ryania                                        | I |      |       | All   |      |
| SSF | sodium aluminum silico-fluoride (Mothproofer) | I |      |       | All   |      |

Table 1 – continued

| Code | Materials                                           | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks                                                           |
|------|-----------------------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|-------------------------------------------------------------------|
|      |                                                     |     | Category A                          | Category B                          | Category C                                      | Category D                            |                                                                   |
| SUL  | sulphur                                             | I   |                                     |                                     | All                                             |                                       |                                                                   |
| SUS  | sulphide sulphur (lime sulphur)                     | I   |                                     |                                     | All                                             |                                       |                                                                   |
| SIL  | silicon dioxide                                     | I   |                                     |                                     |                                                 | All                                   |                                                                   |
| SFS  | sodium fluosilicate                                 | I   |                                     | >20%                                | ≤20%                                            |                                       |                                                                   |
| TPC  | terpene polychlorinates (Strobane)                  | I   | All                                 |                                     |                                                 |                                       |                                                                   |
| SFT  | sulfotep                                            | I   | >10%                                | ≤10%                                |                                                 |                                       |                                                                   |
| SFL  | sodium fluoride                                     | I   | >15%                                | ≤15%                                |                                                 |                                       |                                                                   |
| SAF  | sodium aluminum fluoride                            | I   |                                     |                                     | All                                             |                                       |                                                                   |
| SFD  | sulfoxide                                           | I   |                                     |                                     |                                                 | All                                   |                                                                   |
| TEP  | TEPP                                                | I   | All                                 |                                     |                                                 |                                       |                                                                   |
| GAR  | tetrachloroinphos (Gardona)                         | I   |                                     |                                     | All                                             |                                       |                                                                   |
| TED  | tetradifon (Tedion)                                 | I   |                                     |                                     | All                                             |                                       |                                                                   |
| TES  | tetrasul                                            | I   |                                     |                                     | >20%                                            | ≤20%                                  |                                                                   |
| THA  | isobornyl thiocynoacetate                           | I   |                                     |                                     | > 2%                                            | ≤ 2%                                  |                                                                   |
| TOX  | toxaphene                                           | I   | All                                 |                                     |                                                 |                                       |                                                                   |
| TRI  | trichlorfon (Dipterex), (Dylox,<br>Neguvon, Anthon) | I   |                                     |                                     | All                                             |                                       |                                                                   |
| TDE  | TDE                                                 | I   | All                                 |                                     |                                                 |                                       |                                                                   |
| TRC  | trichloronet (Agritox) (R)                          | I   |                                     | >6.8%                               | ≤6.8%                                           |                                       |                                                                   |
| TEC  | tecnazene                                           | I   |                                     | All                                 |                                                 |                                       |                                                                   |
| THS  | thallium sulphate                                   | I   | >0.5%                               |                                     |                                                 | 0.5%                                  | Tamper proof<br>metal container<br>other than alum.<br>ant traps. |
| MTM  | Vapam (metam) (sodium)                              | I   |                                     |                                     | All                                             |                                       |                                                                   |
| ZRN  | Zectran                                             | I   |                                     | All                                 |                                                 |                                       |                                                                   |

## NEMATOCIDES (N)

|     |                      |   |      |      |      |  |  |
|-----|----------------------|---|------|------|------|--|--|
| CPN | chloropicrin         | N | > 1% | ≤ 1% |      |  |  |
| DAZ | Dazomet              | N |      | 35%  | 35%  |  |  |
| DCP | dibromochloropropane | N |      | >30% | ≤30% |  |  |

|     |                                                                |   |      |      |      |
|-----|----------------------------------------------------------------|---|------|------|------|
| VCR | dichlorophenyl diethyl phosphorothioate                        | N |      | All  |      |
| DSF | dichloropropene (D-D)                                          | N |      | >50% | ≤50% |
| EDB | ethylene dibromide                                             | N |      | >20% | ≤20% |
| EDC | ethylene dichloride                                            | N |      |      | All  |
| FEL | Fensulfothion                                                  | N | >15% | ≤15% |      |
| MTM | metam (sodium) (VAPAM)                                         | N |      |      | All  |
| VCR | 0-(2,4-dichloro phenyl-O,<br>0-diethyl phosphorothioate) VC-13 | N |      | All  |      |

#### OTHER COMPOUNDS (O/C)

|     |                                              |     |  |     |     |
|-----|----------------------------------------------|-----|--|-----|-----|
| AAC | acetic acid                                  | O/C |  | All |     |
| ANR | antimycin (fish toxicant)                    | O/C |  | All |     |
| BAS | Bayluscide 5G (Molluscicide)                 | O/C |  | All |     |
| TFM | Bayluscide TFM WP (See Lamprey<br>Larvicide) | O/C |  | All |     |
| BIO | Biobar, J.F. (Bactericide)                   | O/C |  | All |     |
| FET | Fenthion (Bird toxicant)                     | O/C |  | All |     |
| MHY | metaldehyde (Slug and Small Bait)            | O/C |  |     | All |
| MEY | methoxyethanol                               | O/C |  |     | All |
| MIT | Mitin FF (Mothproofener)                     | O/C |  |     | All |
| PRP | propanic acid                                | O/C |  |     | All |

#### REPELLENTS (Rp)

|     |                                       |    |  |     |     |
|-----|---------------------------------------|----|--|-----|-----|
| BON | bone oil                              | Rp |  | All |     |
| BPG | butoxypolpropylene glycol (Stabilene) | Rp |  |     | All |
| BBE | benzyl benzoate                       | Rp |  | All |     |
| CRA | cresylic acid                         | Rp |  | All |     |
| CRT | creosote                              | Rp |  |     | All |
| CAS | Capsaicin                             | Rp |  |     | All |

Table 1 – continued

| Code | Materials                                                         | Use | (Restricted<br>Concen-<br>trations) | (Commercial<br>Concen-<br>trations) | (Home and<br>Garden Use<br>Concen-<br>trations) | (Unrestricted<br>Concen-<br>trations) | Remarks |
|------|-------------------------------------------------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------------------|---------------------------------------|---------|
|      |                                                                   |     | Category A                          | Category B                          | Category C                                      | Category D                            |         |
| IND  | dimethylcarboboxy dehydro-pyrone                                  | Rp  |                                     |                                     |                                                 | All                                   |         |
| DMP  | dimethyl phthalate                                                | Rp  |                                     |                                     |                                                 | All                                   |         |
| DTU  | N,N-diethyl-m-toluamide                                           | Rp  |                                     |                                     | > 5%                                            | ≤ 5%                                  |         |
| TAB  | di-n-butyl succinate                                              | Rp  |                                     |                                     |                                                 | All                                   |         |
| EHX  | ethyl hexanediol                                                  | Rp  |                                     |                                     |                                                 | All                                   |         |
| EUC  | eucalyptus oil                                                    | Rp  |                                     |                                     |                                                 | All                                   |         |
| MNK  | methyl nonyl ketone (MGK Dog & Cat)                               | Rp  |                                     |                                     |                                                 | All                                   |         |
| MGB  | MGK Repellent II (D <sub>2</sub> butylene)-<br>tetrahydrofurfural | Rp  |                                     |                                     |                                                 | All                                   |         |
| MGD  | MGK Repellent 326 (propyl<br>isocinchomeronate)                   | Rp  |                                     |                                     |                                                 | All                                   |         |
| MGH  | MGK Repellent 874 (hydroxy ethyl<br>N-octyl sulfide)              | Rp  |                                     |                                     |                                                 | All                                   |         |
| MUS  | mustard oil                                                       | Rp  |                                     |                                     |                                                 | All                                   |         |
| NPH  | naphthalene                                                       | Rp  |                                     |                                     | All                                             |                                       |         |
| NYC  | tertiary octyl mercaptan                                          | Rp  |                                     |                                     | All                                             |                                       |         |
| CIT  | oil of citronella                                                 | Rp  |                                     |                                     |                                                 | All                                   |         |
| LAV  | oil of lavender (Fly screen)                                      | Rp  |                                     |                                     |                                                 | All                                   |         |
| OAL  | oil of lemongrass                                                 | Rp  |                                     |                                     |                                                 | All                                   |         |
| OAN  | oil of sassafras                                                  | Rp  |                                     |                                     |                                                 | All                                   |         |
| PRT  | Protection 0.1 547                                                | Rp  |                                     |                                     |                                                 | All                                   |         |
| ROS  | Rosemary Oil                                                      | Rp  |                                     |                                     |                                                 | All                                   |         |
| THI  | thiram                                                            | Rp  |                                     | >50%                                | ≤50%                                            |                                       |         |
| THM  | thyme oil                                                         | Rp  |                                     |                                     |                                                 | All                                   |         |
| ZIC  | zinc dimethyldithiocarbamate<br>cyclohexylamine                   | Rp  |                                     |                                     | >3.2%                                           | ≤3.2%                                 |         |

|     |                             | RODENTICIDES (Rd) |        |         |         |                                              |
|-----|-----------------------------|-------------------|--------|---------|---------|----------------------------------------------|
| ALS | alphachloralose             | Rd                | All    |         |         |                                              |
| MGB | butylene tetrahydrofurfural | Rd                |        | > 1%    | ≤ 1%    |                                              |
| FUM | coumafuryl (Fumarin)        | Rd                |        | >40%    | ≤40%    | ≤14%                                         |
| DDT | DDT                         | Rd                | All    |         |         |                                              |
| DPC | diphacinone (Diphacin)      | Rd                |        | > 1%    | ≤ 1%    | ≤0.01%                                       |
| END | endrin                      | Rd                | All    |         |         |                                              |
| GOP | Gophocide                   | Rd                | >0.17% | ≤0.17%  |         |                                              |
| HCN | hydrogen cyanide            | Rd                | All    |         |         |                                              |
| MBR | methyl bromide              | Rd                | All    |         |         |                                              |
| NOB | norbomide (Raticate)        | Rd                | >50%   | ≤50%    |         |                                              |
| PIN | pindone (Pival)             | Rd                |        | >10%    | ≤10%    |                                              |
| RSQ | red squill                  | Rd                | All    |         |         |                                              |
| STR | strychnine                  | Rd                |        | >0.5%   | ≤0.5%   |                                              |
| STT | strychnine nitrate          | Rd                |        | >0.5%   | ≤0.5%   |                                              |
| STS | strychnine sulphate         | Rd                |        | >0.5%   | ≤0.5%   |                                              |
| SQS | sulfaquinoxaline (Na salt)  | Rd                |        | >0.5%   | ≤0.5%   |                                              |
| THS | thallium sulphate           | Rd                | >0.5%  | ≤0.5%   |         | (Metal container other than alum. ant traps) |
| TOX | toxaphene                   | Rd                | All    |         |         |                                              |
| WAR | warfarin                    | Rd                |        | >0.025% | ≤0.025% |                                              |
| ZNP | zinc phosphide              | Rd                | > 5%   | ≤ 5%    |         |                                              |

# APPENDIX

## AIR SAMPLES – ONTARIO DEPARTMENT OF HEALTH

### Residue Analysis Report (Report No. 174)

### Provincial Pesticide Residue Testing Laboratory

### Ontario Department of Agriculture and Food

Content in total samples as received (i.e. absolute amount)

| Lab. No.              | Sample No. | Azinphos |         |           |            |           |        |           |           |          |       |
|-----------------------|------------|----------|---------|-----------|------------|-----------|--------|-----------|-----------|----------|-------|
|                       |            | Methyl   | Phosmet | Chlordane | Endosulfan | Malathion | Ethion | Mevinphos | Parathion | Morestan | PCB's |
| 71-1946               | 1          | ND       | ND      | ND        | ND         | ND        | ND     | ND        | ND        | ND       | 4 ug  |
| 1947                  | 2          | ND       | ND      | ND        | ND         | ND        | ND     | ND        | ND        | ND       | 4 ug  |
| 1948                  | 3          | ND       | ND      | ND        | ND         | ND        | ND     | ND        | ND        | ND       | 4 ug  |
| 1949                  | 4          | ND       | ND      | ND        | ND         | ND        | ND     | ND        | ND        | ND       | 4 ug  |
| 1950                  | 5          | ND       | ND      | ND        | ND         | ND        | ND     | ND        | ND        | ND       | 4 ug  |
| Limit of detection ug |            | 25       | 5       | 1         | 2          | 0.5       | 0.2    | 0.2       | 0.2       |          |       |

*We do not have standards Omite and Phosalone; these are still on order. There was not enough sample for carbaryl as it requires separate analysis.*

*No suitable method for binapacryl at trace levels.*

*A phosphate response was found but could not be identified. It did not appear to correspond with any insecticide known to be used in Ontario.*

DATE OF SUBMISSION: May 5, 1971

**SWABS AND SWEEPINGS FROM PESTICIDE OUTLETS  
(VINELAND CO-OP)**

**Residue Analysis Report (Report No. 203)  
Provincial Pesticide Residue Testing Laboratory  
Ontario Department of Agriculture and Food**

Content in Swab and Sweepings ( $\mu\text{g}/\text{swab}$ ,  $\mu\text{g}/\text{sweepings}$ )

| Lab. No. | Sample Description        | Wt. of<br>Sweeping<br>(grams) | Content in Swab and Sweepings ( $\mu\text{g}/\text{swab}$ , $\mu\text{g}/\text{sweepings}$ ) |       |       |       |              |         |          |          |        |         |
|----------|---------------------------|-------------------------------|----------------------------------------------------------------------------------------------|-------|-------|-------|--------------|---------|----------|----------|--------|---------|
|          |                           |                               | ppDDE                                                                                        | ppDDD | opDDT | ppDDT | Total<br>DDT | Lindane | Dieldrin | Diazinon | Ethion | Phosmet |
| 71-2255  | V1-Vineland-1-Swab        |                               | 0.84                                                                                         | Trace | 0.11  | 2.06  | 3.01         | 0.56    | 0.06     | —        | —      | —       |
| 2256     | V2-Vineland-Sweepings     | 1.02                          | 1.92                                                                                         | 2.46  | 3.18  | 31.62 | 39.18        |         |          |          | 0.12   | 15.00   |
| 2257     | St.D-1-St. David-1-Swab   |                               | 0.05                                                                                         | 0.14  | 0.04  | 0.58  | 0.81         | 0.99    | Trace    | —        | —      | —       |
| 2258     | St.D-2-St. David-Sweeping | 7.16                          | 14.30                                                                                        | Trace | 38.7  | 683.8 | 736.8        | —       | 6.01     | —        | 7.37   | —       |
| 2259     | FH-1 Fonthill Swab        |                               | 0.52                                                                                         | 0.23  | 0.19  | 2.32  | 3.26         | Trace   | 0.08     | 0.18     | —      | 1.91    |
| 2260     | FH-2 Fonthill Sweeping    | 1.45                          | 0.74                                                                                         | 0.84  | 1.07  | 16.82 | 19.47        | Trace   | 3.16     | 35.7     | 5.95   | 37.4    |
| 2261AJ-1 | Jordan-Swab               |                               | 0.50                                                                                         | Trace | Trace | 1.29  | 1.79         | Trace   | 6.41     | —        | —      | —       |
| 2262BJ-2 | Jordan-Sweeping           | 2.00                          | 4.62                                                                                         | 0.01  | 1.70  | 26.40 | 32.73        | —       | Trace    | —        | 1.36   | —       |

SWABS — Hexane washings of 20 containers with cotton batten.

SWEEPINGS — Taken from six square feet of warehouse floor.

DATE OF SUBMISSION: May 19, 1971



Appendix — continued**Pesticide Dealer Questionnaire**

|                 |                              |     |
|-----------------|------------------------------|-----|
| CLASS OF OUTLET | Fruit & Vegetable Pesticides | 125 |
|                 | Field Crop Pesticides        | 210 |
|                 | Animal Health Products       | 156 |
|                 | Other (specify)              | 41  |
|                 | AREA OF SPECIALIZATION       |     |
| CLASS OF OUTLET | Food Store                   | 152 |
|                 | Fertilizer Plant             | 82  |
|                 | Packing House                | 9   |
|                 | Farmer Dealer                | 54  |
|                 | Petroleum Agent              | 80  |
|                 | Other (specify)              | 56  |

*Please check (✓) the appropriate heading(s) listed below for each major product group.*

| MAJOR PRODUCT GROUPS HANDLED | PHYSICAL FORM                                            | Physical Form         |                 |         | Packaging |       |       |         |                 |
|------------------------------|----------------------------------------------------------|-----------------------|-----------------|---------|-----------|-------|-------|---------|-----------------|
|                              |                                                          | Liquid                | Wettable Powder | Granule | Metal     | Paper | Glass | Plastic | Other (Specify) |
|                              | Herbicides, e.g. Atrazine                                | 232                   | 269             | 97      | 236       | 177   | 41    | 112     | 1               |
|                              | Insecticides, e.g. Malathion                             | 238                   | 216             | 126     | 187       | 137   | 145   | 53      | 1               |
|                              | Fungicides, e.g. Captan                                  | 66                    | 189             | 18      | 45        | 185   | 11    | 23      | 1               |
|                              | Soil Fumigants, e.g. Vorlex or Spot Fumigants, e.g. EB15 | 64                    | 20              | 20      | 56        | 30    | 5     | 4       | 0               |
|                              | Other (Specify)                                          | 2                     | 1               | 0       | 2         | 1     | 0     | 1       |                 |
| PERSONNEL                    | Number of employees involved in pesticide sales          | a)                    |                 |         | Yrs.      | No.   | b)    |         | No.             |
|                              |                                                          | a)                    |                 |         | 0-5       | 305   | 0-1   |         | 2               |
|                              | Average years of experience                              | b)                    |                 |         | 6-10      | 22    | 2-5   |         | 82              |
|                              |                                                          | b)                    |                 |         | 11-15     | 1     | 6-10  |         | 154             |
|                              |                                                          | b)                    |                 |         | >15       | 2     | 11-15 |         | 59              |
|                              | Do employees make pesticide use recommendations          | Yes                   |                 |         | 221       | No    | 13    |         |                 |
|                              | Reference source for recommendations                     | Government Guides     |                 |         |           | 306   |       |         |                 |
|                              |                                                          | Product Label         |                 |         |           | 302   |       |         |                 |
|                              |                                                          | Commercial Literature |                 |         |           | 204   |       |         |                 |
|                              |                                                          | Experience            |                 |         |           | 221   |       |         |                 |
|                              |                                                          | Other (specify)       |                 |         |           | 7     |       |         |                 |

Specific pesticide training, i.e., diploma or degree courses in agriculture, night or correspondence courses offered by ODAF or Ont. Dept. Health, etc., spray schools, short courses, etc.

|               |     |
|---------------|-----|
| University    | 79  |
| Govt. courses | 34  |
| Other         | 119 |
| None          | 167 |

NOTE: *Please provide appropriate details for each employee. Complete and correct response to this particular question will be most valuable.*

Please estimate the % of sales handled by (a) full-time employees a) %  
(b) casual or seasonal labour b) %

| a) %  | No. | b) %  | No. |
|-------|-----|-------|-----|
| 0-25  | 1   | 0-25  | 58  |
| 26-50 | 1   | 26-50 | 4   |
| 51-75 | 2   | 51-75 | 0   |
| 76+   | 310 | 76+   | 15  |

## HEALTH ASPECTS

Do employees wear protective clothing when handling pesticides?

|                     | Yes | No  |
|---------------------|-----|-----|
| (a) gloves          | 65  | 269 |
| (b) rubber gloves   | 42  | 297 |
| (c) respirator      | 11  | 325 |
| (d) other (specify) | 49  | 209 |

*Other handling or safety precautions taken, e.g. washing, shower and change of clothes before leaving work, etc. (please specify).*

|                                                                      | Please check (✓) either | Yes | No  |
|----------------------------------------------------------------------|-------------------------|-----|-----|
| Emergency procedures posted and/or readily available?                |                         | 247 | 83  |
| (a) Physician name and phone number                                  |                         | 264 | 71  |
| (b) Local poison control centre phone number                         |                         | 155 | 177 |
| (c) Emergency first aid and antidote procedures                      |                         | 158 | 170 |
| (d) Have there been any accidents or illnesses involving pesticides? |                         | 11  | 321 |

If answer to above is **yes**, please state:

|      |         |      |           |
|------|---------|------|-----------|
| Name | Address | Date | Pesticide |
|------|---------|------|-----------|

**Appendix – continued**  
*(Pesticide Dealer Questionnaire)*

RECEIVING Is product delivered by manufacturer? 293 or picked up by dealer? 124  
 Type of delivery – Rail 4 Own Truck 178 Common Carrier 248  
 Is product delivered by dealer? 211 or picked up by farmer? 286

Please check (✓) the appropriate heading(s) listed below for each category.

STORAGE

(1) Separate Storage Room 102 Building 46 Common Storage 89

e.g., Packing room 25  
 Barn 10  
 Living quarters 0  
 Other (Specify) 87

(2) Locked 153 Open Access 175

(3) Forced Ventilation 12 Natural Ventilation 317

(4) Is storage area posted, i.e., KEEP OUT or DANGER – Pesticide Storage? Yes 48 No 279

(5) Is storage area adjacent to (within 50 feet of) a well, stream, pond or lake? Yes 28 No 296

If answered “yes”, is drinking water supply taken from one of above? Yes 10 No

(6) Soil adjacent to storage area: sand 26 sandy loam 109 clay 120 gravel 100

(7) Drainage adjacent to storage area – via soil 146 surface water course 54 ditch 39  
 municipal storm sewer 92 other (specify) 4

|                                                         |   |                 |       |      |     |
|---------------------------------------------------------|---|-----------------|-------|------|-----|
|                                                         |   | Floor           | Walls | Roof |     |
| (8) Primary construction components of storage building | { | wood            | 112   | 152  | 150 |
|                                                         |   | concrete        | 217   | 111  | 17  |
|                                                         |   | steel           | 4     | 64   | 166 |
|                                                         |   | other (specify) | 1     | 6    | 26  |

(9) Indicate number of above ground levels in storage building a) one level: 271 b) two-five levels: 53  
 Does storage building have a basement? Yes 78 No 192

(10) Is the pesticide storage building adjacent to (within 100 feet of) neighbouring structures?  
 Yes 169 No 165 If yes, specify type of structure.

STORAGE (a)

(1a) Are product groups stored adjacent to (i.e., within 3 feet of) each other? Yes 289 No 42

AND

(2a) Are product groups stacked separately? 273 or in mixed lots? 47 e.g., herbicides and insecticides piled in separate stacks or mixed together in the same stack?

DISPLAY (b)

(1b) Are product groups displayed adjacent to (i.e., within 3 feet of) each other? Yes 281 No 46

(2b) Are product groups displayed separately 225 or in mixed lots 90 e.g., herbicides and insecticides displayed as separate units or mixed together?

(3) Are pesticides stored and displayed adjacent to (i.e., within 3 feet of)

|                                                                          | Storage |     | Display |     |
|--------------------------------------------------------------------------|---------|-----|---------|-----|
|                                                                          | Yes     | No  | Yes     | No  |
| (a) Animal Feeds                                                         | 54      | 110 | 6       | 82  |
| (b) Animal Drugs and/or Fly Control Products                             | 62      | 69  | 40      | 63  |
| (c) Human Food and/or Food Containers                                    | 6       | 119 | 3       | 103 |
| (d) Clothing                                                             | 5       | 108 | 0       | 105 |
| (e) Flammable Materials, e.g., Petroleum Products or Nitrate Fertilizers | 48      | 67  | 31      | 68  |
| (f) Other (specify)                                                      | 1       | 38  | 7       | 40  |

## DISPOSAL

### AND

## HANDLING

|                                                       |                      | Burying | Burning | Municipal Dump | Other (Specify) |
|-------------------------------------------------------|----------------------|---------|---------|----------------|-----------------|
| Disposal procedure for                                | (a) Products         | 57      | 45      | 70             | 24              |
|                                                       | (b) Empty Containers | 30      | 93      | 137            | 22              |
| Are containers opened and repackaged for retail sale? |                      | Yes 6   | No 305  |                |                 |

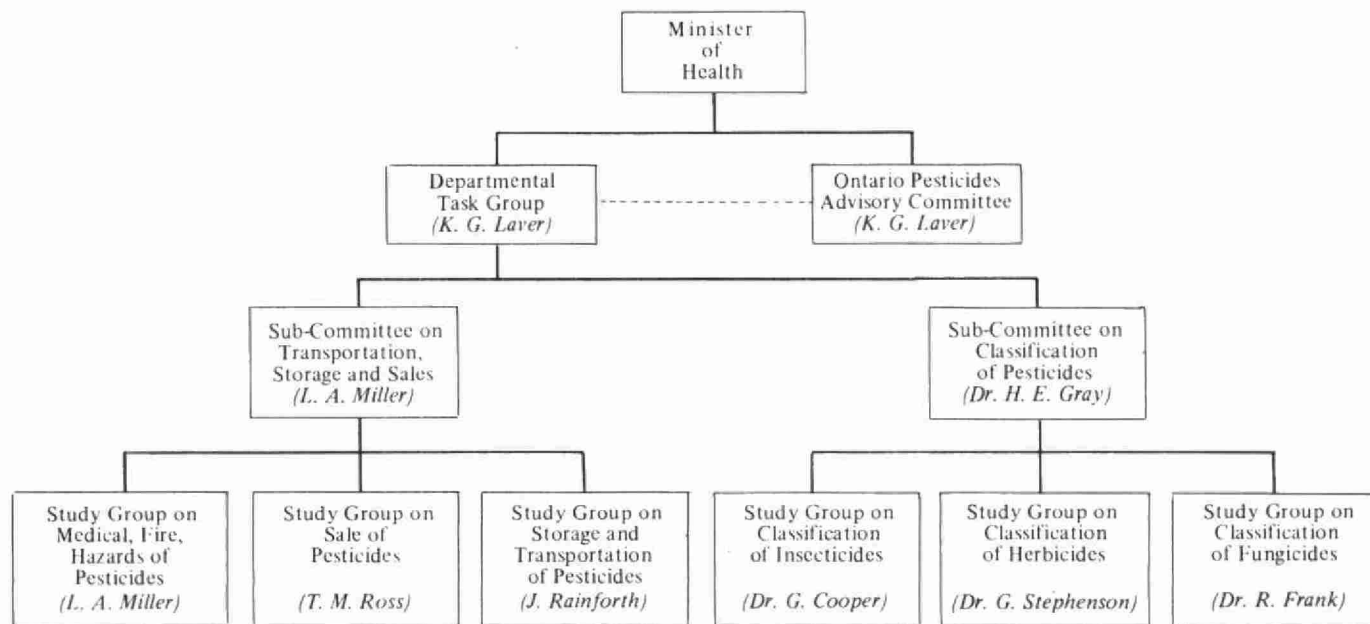
## FIRE

## ASPECTS

### Emergency procedures

- (a) Fire protection, e.g., extinguisher 283 water hose 113 sprinkler system 41 alarm system 22
- (b) Local fire department phone number posted 125 readily available 232
- (c) Is local fire chief and/or police advised of possible dangers? Yes 163 No 151
- (d) Is there a water course within 300 ft. of premises? Yes 105 No 228  
(e.g., well, river, stream, lake, pond)
- (e) Distance from local fire department:
- |          |          |        |
|----------|----------|--------|
| a) miles | a) miles | number |
|          | 0-1      | 204    |
|          | 2-5      | 88     |
|          | 5-10     | 28     |
|          | 10+      | 4      |
- (f) Is local fire department full time 79 volunteer 261.

**ORGANIZATION CHART**  
of the Task Group, its Sub-committees and Study Groups  
Appointed to Study the  
Classification, Transportation, Distribution, Storage and Sales of Pesticides in Ontario



*Note: Chairmen's names appear in brackets.*

# MEMBERSHIP OF THE TASK GROUP APPOINTED TO STUDY THE CLASSIFICATION, TRANSPORTATION, DISTRIBUTION, STORAGE & SALE OF PESTICIDES IN ONTARIO

## Task Group

### Chairman:

|                |                                                    |
|----------------|----------------------------------------------------|
| K. G. Laver    | Chairman, Pesticides Advisory Committee            |
| S. D. Queripel | Ontario Garden Maintenance & Landscape Association |
| M. H. McPhail  | Ontario Grain & Feed Dealers Association           |
| H. E. Harvey   | Canadian Retail Hardware Association               |
| T. M. Ross     | Canadian Retail Hardware Association               |
| R. B. Heard    | Ontario College of Pharmacy                        |
| W. N. Coleman  | Canada Department of Agriculture                   |
| J. G. Kurys    | Ontario Department of Health                       |
| J. R. Ferguson | Vineland Growers Co-operative                      |
| L. A. Miller   | Canadian Agricultural Chemicals Association        |
| J. H. Trotter  | Canadian Manufacturers of Chemical Specialties     |
| H. E. Gray     | Entomologist                                       |
| M. K. Laver    | Ontario Nursery Trades Association                 |
| W. G. Carleton | Canadian Manufacturers of Chemical Specialties     |
| B. G. Wilson   | Ontario Fruit & Vegetable Growers Association      |
| J. D. Curtis   | Ontario Department of Agriculture & Food           |

### Secretary:

|                |                                          |
|----------------|------------------------------------------|
| D. L. Bogaerts | Secretary, Pesticides Advisory Committee |
|----------------|------------------------------------------|

## Sub-Committee on the Classification of Pesticides

### Chairman:

|                  |                                                |
|------------------|------------------------------------------------|
| H. E. Gray       | Entomologist                                   |
| G. S. Cooper     | Canadian Agricultural Chemicals Association    |
| R. Frank         | Ontario Department of Agriculture & Food       |
| J. G. Kurys      | Ontario Department of Health                   |
| W. G. Carleton   | Canadian Manufacturers of Chemical Specialties |
| G. R. Stephenson | University of Guelph                           |
| K. G. Laver      | Chairman, Pesticides Advisory Committee        |
| E. R. Houghton   | Canada Department of Agriculture               |
| F. L. McEwen     | University of Guelph                           |

### Secretary:

|                |                                          |
|----------------|------------------------------------------|
| D. L. Bogaerts | Secretary, Pesticides Advisory Committee |
|----------------|------------------------------------------|

## Study Group on Insecticides

G. S. Cooper, Industry  
R. Frank, ODAF  
F. McEwen, U. of G.  
K. Loftus, L. & F.  
R. Harris, CDA

## Study Group on Fungicides

R. Frank, ODAF  
J. Northover, CDA  
C. Kelley, U. of G.  
C. D. McKeen, CDA  
G. S. Cooper, Industry

## Study Group on Herbicides

Dr. G. R. Stephenson, U. of G.  
Dr. C. M. Switzer, U. of G.  
Dr. J. D. Bandeen, U. of G.  
Dr. C. G. Waywell, U. of G.  
Dr. W. J. Saidals, CDA  
Dr. L. W. Smith, U. of G.

## **SUB-COMMITTEE ON TRANSPORTATION, DISTRIBUTION, STORAGE & PACKAGING OF PESTICIDES**

*Chairman:*

|                |                                                    |
|----------------|----------------------------------------------------|
| L. A. Miller   | Canadian Agricultural Chemicals Association        |
| W. N. Coleman  | Canada Department of Agriculture                   |
| M. H. McPhail  | Ontario Grain & Feed Association                   |
| T. M. Ross     | Canadian Retail Hardware Association               |
| B. G. Wilson   | Ontario Fruit & Vegetable Growers Association      |
| M. K. Laver    | Ontario Nursery Trades Association                 |
| S. D. Queripel | Ontario Garden Maintenance & Landscape Association |
| R. B. Heard    | Ontario College of Pharmacy                        |
| B. Taylor      | Ontario Federation of Agriculture                  |
| J. H. Trotter  | Canadian Manufacturers of Chemical Specialties     |
| H. E. Davis    | Ontario Soil & Crop Investment Association         |
| D. Pallett     | Ontario Department of Agriculture & Food           |
| J. R. Bateman  | Ontario Fire Marshal's Office                      |

*Secretary:*

|                |                                          |
|----------------|------------------------------------------|
| D. L. Bogaerts | Secretary, Pesticides Advisory Committee |
|----------------|------------------------------------------|

## **STUDY GROUP ON STORAGE AND TRANSPORTATION OF PESTICIDES**

*Chairman:*

|                 |                                                    |
|-----------------|----------------------------------------------------|
| J. R. Rainforth | Ontario Department of Agriculture & Food           |
| S. D. Queripel  | Ontario Garden Maintenance & Landscape Association |
| B. Taylor       | Ontario Federation of Agriculture                  |
| J. H. Trotter   | Canadian Manufacturers of Chemical Specialties     |
| H. E. Davis     | Ontario Soil & Crop Improvement Association        |
| D. Pallett      | Ontario Department of Agriculture & Food           |
| J. R. Bateman   | Ontario Fire Marshal's Office                      |
| L. A. Miller    | Canadian Agricultural Chemicals Association        |
| T. C. Jacob     | Canadian Agricultural Chemicals Association        |

*Secretary:*

|                |                                          |
|----------------|------------------------------------------|
| D. L. Bogaerts | Secretary, Pesticides Advisory Committee |
|----------------|------------------------------------------|

## **STUDY GROUP ON SALES OF PESTICIDES**

*Chairman:*

|                 |                                               |
|-----------------|-----------------------------------------------|
| T. M. Ross      | Canadian Retail Hardware Association          |
| W. N. Coleman   | Canada Department of Agriculture              |
| M. H. McPhail   | Ontario Grain & Feed Dealers Association      |
| B. G. Wilson    | Ontario Fruit & Vegetable Growers Association |
| M. K. Laver     | Ontario Nursery Trades Association            |
| R. B. Heard     | Ontario College of Pharmacy                   |
| L. A. Miller    | Canadian Agricultural Chemicals Association   |
| H. E. Harvey    | Canadian Retail Hardware Association          |
| J. R. Bateman   | Ontario Fire Marshal's Office                 |
| J. A. Oakley    | Canadian Agricultural Chemicals Association   |
| J. R. Rainforth | Ontario Department of Agriculture & Food      |

*Secretary:*

|                |                                          |
|----------------|------------------------------------------|
| D. L. Bogaerts | Secretary, Pesticides Advisory Committee |
|----------------|------------------------------------------|

## STUDY GROUP ON MEDICAL, FIRE AND OCCUPATIONAL HAZARDS

*Chairman:*

L. A. Miller

E. Mastromatteo

J. R. Bateman

K. G. Laver

*Secretary:*

D. L. Bogaerts

Canadian Agricultural Chemicals Association

Ontario Department of Health

Ontario Fire Marshal's Office

Chairman, Pesticides Advisory Committee

Secretary, Pesticides Advisory Committee



## GLOSSARY

**agriculturalist** (see page 12 of this report)

**bulk dealer** means a manufacturer, formulator, distributor, and/or wholesaler who sells or distributes Category A, Category B, or Category C pesticides to persons other than the end user.

**bulk storage** means any space used by a manufacturer, formulator, distributor, or wholesaler to store pesticides.

**Category A, Category B, Category C, and Category D pesticides** means any pesticide or mixture of pesticides as they appear under Schedule A of those regulations, designated Restricted, Commercial, Home and Garden and Non-restricted, respectively.

**defoliant** means any pesticide or mixture of pesticides intended to cause the leaves or foliage to drop from a plant with or without causing abscission.

**desiccant** means any pesticide or mixture of pesticides intended to artificially accelerate the drying of plant tissues.

**end user** means a person who, by himself or by his employee, assistants, or agents purchases or otherwise obtains a pesticide to perform or with the intention to perform an extermination.

**fumigant** means any pesticide or mixture of pesticides which can exist in a gaseous state and is lethal to a pest organism.

**fungicide** means any pesticide or mixture of pesticides intended to prevent, destroy, repel or mitigate any fungi.

**fungi** means all non-chlorophyll-bearing thallophytes including rusts, smuts, mildews, molds, yeasts, bacteria, except those on or in living man.

**herbicide** means any pesticide or mixture of pesticides intended to prevent, destroy, repel or mitigate any unwanted vegetation.

**insecticide** means any pesticide or mixture of pesticides intended to prevent, destroy, repel, attract or mitigate any insect which may be present in any environment whatsoever.

**land** means all land and water areas, including airspace, and all plants, animals, structures, buildings, devices and contrivances appurtenant thereto or situated thereon, fixed or mobile, including any used for transportation.

**nematocide** means any pesticide or mixture of pesticides intended to prevent, destroy, repel or mitigate nematodes.

**person** means any individual, firm, partnership, association, corporation, company, joint stock association, body politic, or any organized group of persons whether incorporated or not.

**pest** means, but is not limited to, insects, vermin, birds, mites, ticks, rodents, nematodes, snails, slugs, fungi, vegetation and any form of plant or animal life or virus which is normally considered to be a pest but does not include virus on or in living man.

**pesticide** means, but is not limited to, any substance or mixture of substances, including any living organism or any products derived therefrom, intended to prevent, destroy, control, repel, attract or mitigate any living organism excluding man.

**plant regulator** means any pesticide or mixture of pesticides intended through physiological action to accelerate or retard the rate of growth or maturation, or to otherwise alter the behaviour of plants, but shall not include substances insofar as they are intended to be used as plant nutrients, trace elements, nutritional chemicals, plant inoculants or soil amendments.

**rodenticide** means any pesticide or mixture of pesticides intended to prevent, destroy, repel, attract or mitigate rodents or any other vertebrate animal.

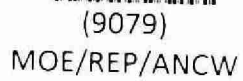
**soil sterilants** means any pesticide or mixture of pesticides intended to prevent, destroy, repel or mitigate any living soil organism.

**vendor** means a premise licensed to sell or distribute Category A, Category B or Category C pesticides.

**warning gas** means a gas that rapidly identifies its presence by its effect on the sense of smell or touch.

## Date Due

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MOE/REP/ANCW

DATE DUE

Ontario Ministry of the En  
Report by the  
committee appointed anew

anew

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**ONTARIO**  
MINISTRY OF THE ENVIRONMENT  
HON. J. A. C. AULD, MINISTER  
EVERETT BIGGS, DEPUTY MINISTER

JANUARY 1972